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Amendments to the Claims

Claim 1 (currently amended). A method of enhancing an image, comprising:
smoothing the image to produce a smoothed image; and
performing lowpass filtering on the smoothed image to produce an enhanced image; and
detecting an edge in the smoothed image.

Claim 2. (original) The method of claim 1, wherein smoothing comprises:
applying a two-dimensional filter to a pixel in the image;
storing a pixel processed by the two-dimensional filter in the smoothed image; and
repeating storing and applying for one or more other pixels in the image.

Claim 3. (original) The method of claim 1, wherein performing lowpass filtering
comprises:
applying a one-dimensional filter to a pixel in the smoothed image;
storing a pixel processed by the one-dimensional filter in the enhanced image; and
repeating storing and applying for one or more other pixels in the smoothed image.

Claim 4 (original). The method of claim 1, wherein lowpass filtering is performed
using a filter having a sharp high-frequency cutoff.

Claim 5. (currently amended) The method of claim 1, ~~further comprising detecting an~~
~~edge in the smoothed image;~~
wherein lowpass filtering is performed only on non-edge areas of the smoothed image.

Claim 6. (original) The method of claim 5, wherein detecting the edge comprises
applying an edge filter to the smoothed image.

Claim 7. (currently amended) A method of enhancing an image, comprising:
smoothing the image to produce a smoothed image;

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performing lowpass filtering on the smoothed image to produce an enhanced image; and
~~The method of claim 1, further comprising~~

applying a median filter to the enhanced image; wherein the median filter is designed to reduce artifacts on the enhanced image.

Claim 8. (original) The method of claim 7, wherein the median filter is applied only to non-edge areas of the enhanced image.

Claim 9. (original) A method of performing inverse halftoning on a halftoned image, comprising:

smoothing the halftoned image using a two-dimensional filter to produce a smoothed image;

detecting edge areas in the smoothed image;

performing lowpass filtering on non-edge areas of the smoothed image; and

generating an enhanced image comprised of the edge areas of the smoothed image and lowpass-filtered non-edge areas of the smoothed image.

Claim 10. (currently amended) The method of claim 9, further comprising applying a median filter to non-edge areas of the enhanced image; wherein the median filter is designed to reduce artifacts in the enhanced image.

Claim 11. (currently amended) An article comprising a machine-readable medium that stores machine-executable instructions for enhancing an image, the instructions causing a machine to:

smooth the image to produce a smoothed image; and

perform lowpass filtering on the smoothed image to produce an enhanced image; and

detect an edge in the smoothed image.

Claim 12. (original) The article of claim 11, wherein smoothing comprises:
applying a two-dimensional filter to a pixel in the image;

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storing a pixel processed by the two-dimensional filter in the smoothed image; and
repeating storing and applying for one or more other pixels in the image.

Claim 13.(original) The article of claim 11, wherein performing lowpass filtering comprises:

applying a one-dimensional filter to a pixel in the smoothed image;
storing a pixel processed by the one-dimensional filter in the enhanced image; and
repeating storing and applying for one or more other pixels in the smoothed image.

Claim 14. (original) The article of claim 11, wherein lowpass filtering is performed using a filter having a sharp high-frequency cutoff.

Claim 15. (currently amended) The article of claim 11, ~~further comprising instructions that cause the machine to detect an edge in the smoothed image;~~
wherein lowpass filtering is performed only on non-edge areas of the smoothed image.

Claim 16. (original) The article of claim 15, wherein detecting the edge comprises applying an edge filter to the smoothed image.

Claim 17. (currently amended) ~~The article of claim 11, further comprising~~ An article comprising a machine-readable medium that stores machine-executable instructions for enhancing an image, the instructions that cause the ~~causing a machine to apply a median filter to the enhanced image; , wherein the median filter is designed to reduce artifacts on the enhanced image.~~

Claim 18. (original) The article of claim 17, wherein the median filter is applied only to non-edge areas of the enhanced image.

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Claim 19. (original) An article comprising a machine-readable medium that stores machine-executable instructions for performing inverse halftoning on a halftoned image, the instructions causing a machine to:

- smooth the halftoned image using a two-dimensional filter to produce a smoothed image;
- detect edge areas in the smoothed image;
- perform lowpass filtering on non-edge areas of the smoothed image; and
- generate an enhanced image comprised of the edge areas of the smoothed image and lowpass-filtered non-edge areas of the smoothed image.

Claim 20. (currently amended) The article of claim 19, further comprising instructions that cause the machine to apply a median filter to non-edge areas of the enhanced image; wherein the median filter is designed to reduce artifacts in the enhanced image.

Claim 21. (currently amended) An apparatus for enhancing an image, comprising:
a memory that stores executable instructions; and
a processor that executes the instructions to:
smooth the image to produce a smoothed image;
detect an edge in the smoothed image; and
perform lowpass filtering on the smoothed image to produce an enhanced image.

Claim 22. (original) The apparatus of claim 21, wherein smoothing comprises:
applying a two-dimensional filter to a pixel in the image;
storing a pixel processed by the two-dimensional filter in the smoothed image; and
repeating storing and applying for one or more other pixels in the image.

Claim 23. (original) The apparatus of claim 21, wherein performing lowpass filtering comprises:

- applying a one-dimensional filter to a pixel in the smoothed image;
- storing a pixel processed by the one-dimensional filter in the enhanced image; and
- repeating storing and applying for one or more other pixels in the smoothed image.

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Claim 24. (original) The apparatus of claim 21, wherein lowpass filtering is performed using a filter having a sharp high-frequency cutoff.

Claim 25. (currently amended) The apparatus of claim 21, wherein:
~~the processor executes instructions to detect an edge in the smoothed image; and~~
lowpass filtering is performed only on non-edge areas of the smoothed image.

Claim 26. (original) The apparatus of claim 25, wherein detecting the edge comprises applying an edge filter to the smoothed image.

Claim 27. (currently amended) ~~The apparatus of claim 21, wherein:~~
An apparatus for enhancing an image, comprising:
a memory that stores executable instructions; and
a processor that executes the instructions to:
smooth the image to produce a smoothed image; and
perform lowpass filtering on the smoothed image to produce an enhanced image,
wherein the processor executes instructions to apply a median filter to the enhanced image, ~~;~~ and wherein the median filter is designed to reduce artifacts on the enhanced image.

Claim 28. (original) The apparatus of claim 27, wherein the median filter is applied only to non-edge areas of the enhanced image.

Claim 29. (original) An apparatus for performing inverse halftoning on a halftoned image, comprising:
a memory that stores executable instructions; and
a processor that executes the instructions to:
smooth the halftoned image using a two-dimensional filter to produce a smoothed image;

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detect edge areas in the smoothed image;
perform lowpass filtering on non-edge areas of the smoothed image; and
generate an enhanced image comprised of the edge areas of the smoothed image
and lowpass-filtered non-edge areas of the smoothed image.

Claim 30. (original) The apparatus of claim 29, wherein the processor executes instructions to apply a median filter to non-edge areas of the enhanced image; and the median filter is designed to reduce artifacts in the enhanced image.

Claim 31. (newly added) The method of claim 7, further comprising:
detecting an edge in the smoothed image.

Claim 32. (newly added) The method of claim 31, wherein lowpass filtering is performed only on non-edge areas of the smoothed image, and wherein detecting the edge comprises applying an edge filter to the smoothed image.

Claim 33. (newly added) The apparatus of claim 27, wherein the processor executes instructions to detect an edge in the smoothed image.

Claim 34. (newly added) The apparatus of claim 33, wherein lowpass filtering is performed only on non-edge areas of the smoothed image, and wherein detecting the edge comprises applying an edge filter to the smoothed image.